

LESSON 10

Foundation Investigation Report

SOILS AND FOUNDATIONS WORKSHOP

FOUNDATION INVESTIGATION REPORT

Lesson 10

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SOILS AND FOUNDATIONS WORKSHOP

FOUNDATION INVESTIGATION REPORT

1. Recall Contents of A Foundation Report

ACTIVITY: Question-Answer

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Foundation Report

The Foundation Report is the Tool Used to Communicate the Site Conditions, and the Recommendations for Design and Construction to Bridge, Roadway, Construction, and Maintenance.

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Foundation Report

Often Referred to During Design, Construction, and After Project Completion (in Resolving Claims or Planning Maintenance Operations).

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Foundation Report

***The Foundation Report
Should be Clear, Concise
and Accurate. The
Preparation of this
Document Deserves Special
Care and Effort.***

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Guidelines for Report Preparation

- ***Author has a Broad Engineering Background***
- ***Include Engineering Analysis and Interpretation***
- ***Include Definitive Recommendations***

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Guidelines for Report Preparation (Cont'd)

- ***Discuss Materials and Conditions Encountered in Construction***
- ***Anticipate Problems and List Solutions***

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
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Guidelines for Report Preparation (Cont'd)

- ***Be Concise and Definite; not Wishy-washy***
- ***Include Supporting Data and Special Notes***
- ***Omit Extraneous Data***

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
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General Outline of Report

- ***Introduction***
- ***Scope***
- ***Date of Reference Plans***
- ***Interpretation of Subsurface Conditions***



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General Outline of Report (Cont'd)

- ***Recommendations for:***
 - ***Embankments***
 - ***Foundation Alternates***
 - ***Construction Considerations***
 - ***Special Notes***

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



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Embankment Considerations

- ***Foundation Settlement***
 - *Amount and Time*
 - *Remedial Methods and Costs*
 - *Downdrag*
 - *Construction Monitoring*

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Embankment Considerations (Cont'd)

- ***Fill Construction***
 - *Materials and Construction*
- ***Fill Stability***
 - *Remedial Measures and Costs*
 - *Safety Factor*

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Spread Footings

- ***Elevation***
- ***Dimensions***
- ***Allowable Bearing Value***
- ***Settlement***
- ***Remedial Measures and Costs***

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Piles

- ***Suitable Types***
- ***Tip Elevation***
- ***Load Capacity***
- ***Driving Criteria***
- ***Driveability***
- ***Load Tests***

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Drilled Shafts

- **Diameter**
- **Length**
- **Load Capacity**
- **Settlement**
- **Constructibility**
- **Load Tests**

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Construction

- ***Water Table***
- ***Pile Installation***
- ***Drilled Shaft Installation***
- ***Excavation Slopes***
- ***Effects on Adjacent Structures***

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



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Special Notes

Special Notes Should be Placed in the Plans or Special Provisions to Bring Attention to Certain Requirements of Design, Construction, or Anticipated Construction Problems.

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Typical Special Notes

Waiting Period
“A __ month waiting period will be imposed after completion of the embankment. The actual length of the waiting period may be reduced by the engineer based on analysis of instrumentation data.”

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Typical Special Notes

Cofferdam Dewatering

“The contractor’s attention is directed to the soil sample gradation test results, on Drawing __, which are furnished to assist the contractor in determining dewatering procedures.”

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

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Typical Special Notes

Construction Instrumentation

“Instrumentation damaged by the contractor shall be repaired or replaced at the contractor’s expense. All construction activity in the area of the instrument shall cease until the damage has been corrected.”

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



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***Subsurface Information
Available to Bidders***

- ***Generalized Subsurface
Profile or Boring Logs on
the Contract Plans***
- ***Lab Test Results &
Soil/Rock Samples Made
Available for Inspection***

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SOILS AND FOUNDATIONS
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***Subsurface Information
Available to Bidders***

- ***Bid Invitation Shows
Where and When All
Available Information may
be Inspected***
- ***Agency Documents
Contractor Inspection of
Information***

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Disclaimers

General Disclaimer:

“Subsurface information was gathered for use in design. The contractor should not rely on such information in preparing the bid.”

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Disclaimers (Cont'd)

- **Courts Give Little Validity to General Disclaimers**
- **Courts do Give Validity to specific Disclaimers**

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Specific Disclaimer

“The boring logs are representative of subsurface conditions at the site of the boring but conditions may vary between borings”.

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Which Offices in the Highway Agency Routinely Receive Copies of a Foundation Investigation Report for a Bridge?

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Foundation Report Distribution

Copies to:

- ***Bridge Design***
- ***Roadway Design***
- ***Construction Section***
- ***Project Engineer File***
- ***Others Required by Agency Policy***

STUDENT

Take 10 Minutes to Read Foundation Report for Workshop Design Problem

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FOUNDATION INVESTIGATION REPORT

1. Recall Contents of A Foundation Report

ACTIVITY: Question-Answer

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